



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/030,847      | 02/22/2002  | Hans Kragl           | PRINZ H1600         | 8300             |

7590 08/13/2003

Norman P Soloway  
Hayes Soloway Hennessey  
Grossman & Hage  
175 Canal Street  
Manchester, NH 03101

EXAMINER

PAK, SUNG H

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/030,847

Applicant(s)

KRAGL, HANS

Examiner

Sung H. Pak

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) Z. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Information Disclosure Statement***

All references submitted in the information disclosure statement have been considered by the examiner.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Black (US 5,479,543).

Black discloses an optical device with all the limitations set forth in the claims, including: a component comprising an optical waveguide, a first mirror (upper portion Fig. 8), and a second mirror (lower portion Fig. 8); wherein the first and second mirrors lie in prolongation of the optical waveguide (Fig. 8); the second mirror, as seen from the optical waveguide, lies behind the first mirror and the first mirror is followed by the second mirror (Fig. 8); wherein the second mirror takes up smaller area than the first mirror (Fig. 8); wherein the second mirror, in a projection into a plane perpendicular to

the longitudinal axis of the optical waveguide, lies within the area of the first mirror (Fig. 8); wherein the first and second mirrors are parabolic shapes (Fig. 8).

Claims 18, 23, 26 are rejected under 35 U.S.C. 102(a) as being anticipated by Heinrich et al (WO 99/24855).

Heinrich et al reference discloses an optical device with all the limitations set forth in the claims, including: a component comprising an optical waveguide, a first and a second mirror, the first mirror lying in prolongation of the optical waveguide, wherein the second mirror also lies in prolongation of the optical waveguide, the second mirror as seen from the optical waveguide, lies behind the first mirror and the first mirror is followed by the second mirror (Fig. 3A); wherein the focal point of the second mirror, as seen from the optical waveguide, lies behind the focal point of the first mirror (Fig. 3A); and a second component comprising an optical transmitter and an optical receiver; wherein the transmitter and the receivers are being arranged next to one another and the two components being precisely aligned such that first mirror and second mirror can cooperate with the optical receiver and transmitter, so that light coupled via the optical waveguide falls on the receiver and the light generated by the transmitter is coupled into the optical waveguide (Fig. 3A).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 24-25, 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinrich et al (WO 99/24855).

Regarding claims, 24-25, Heinrich et al reference discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of receiving groove with a trapezoidal cross-section, and the use of optical fibers with semicircular cross-section. However, trapezoidal cross-section grooves and semicircular cross-section optical fibers are well known and commonly used in the optical communications packaging art. Such features provide a well-known advantage of allowing for a secure fixation of optical fibers to the device substrate, which further allows accurate optical coupling between the optical fibers and the optical device for transmitting optical signals. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Heinrich et al device to have trapezoidal cross-section grooves and semicircular cross-section fibers.

Regarding claims 27-32, Heinrich et al reference discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not explicitly show the use of filters for the active surface of the receiver, and the use of gold coating and conductive tracks on the optical transmitter/ receiver substrate. However, such features are well known and commonly used in the optical communications device packaging art. Such features provide a well-known advantage of allowing for efficient

and compact arrangement of optical transmitters and receivers on a optical device substrate. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Heinrich et al device to have gold coating and conductive tracks on the transmitter/ receiver substrate.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Heinrich et al (US 6,402,394 B1) is a US patent version of Heinrich et al (WO 99/24855). Fujita et al (US 2002/0041731 A1) discloses a two-way optical coupling arrangement comprising plurality of reflective surfaces.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (703) 308-4880. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Application/Control Number: 10/030,847  
Art Unit: 2874

Page 6



Sung H. Pak  
Examiner  
Art Unit 2874

sp  
August 7, 2003



HEMANG SANGHAVI  
PRIMARY EXAMINER